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[57] **ABSTRACT**

A method for modulating both in vivo and/or in vitro bacterial growth by administration of neurochemicals is disclosed. This method involves the recognition of a novel receptor for these compounds and includes the steps of: assessing need to apply a neurotransmitter chemical based upon the nature of the living organism, determining an amount of neurotransmitter chemical required to produce an effect upon the rate of proliferation, applying the neurotransmitter chemical to the living organism, assessing efficacy of this application in reducing or enhancing the rate, and repeating these steps intermittently to monitor the actual rate of proliferation, whether accelerated or depressed. A method is further disclosed wherein the subject neurotransmitter chemical, such as a catecholamine, is added to a basal culture medium for the purpose of augmenting (or suppressing) growth. This step is useful for the commercial production of organisms such as bacteria. It is further useful for the increased production of commercially useful byproducts of this augmented growth, such as glucose or ethanol.

2 Claims, 16 Drawing Sheets